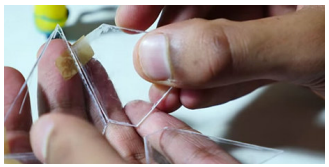
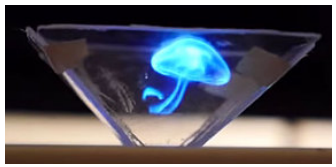
HolauTronjiks

No.6 DRAFT
Shielding and Holography
www.asmrstudio.com

Short-sight-ed-ness (eng) : สายตาสั้น (thai) [flip letters : NICKEL WOBBLE]

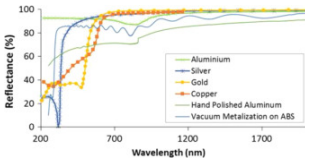



Turn your Phone into a 3D Hologram Projector

Sketch out a basic trapezoid shape on the graph paper using the dimensions 1xm x 3.5cm x 6cm. Snap off the shallow sides of the CD case, trace the paper template, cut transparent plastic. Repeat four times. Tape the four shapes together. Select a hologram-specific video on your smartphone to project a mirrored, 3D hologram. **telegraph.co.uk :: tinyurl.com/y6bl3tc7**

PhotoVoltaic Laser that Heat Blasts Through Rock

Resource based industries meant Roman gold, silver, bronze, orichalcum and copper coinage secured a future. Gold reflects the infrared spectrum best. You can use tin paper or mirrors carved from computer hard disks placed in a parabolic, concave satellite dish to focus light on a single spot. **sciencedirect.com : tinyurl.com/y37vxxkr**



10 Incredible Places Carved From Rock
Gila Cliffs, Bandelier National Monument, Mesa VerdeLycian Tombs, Lalibela, Abu Simbel, Petra, ect...
listverse.com : tinyurl.com/y69par8g

Crookes Tube :: Magnetic Shadows :: en.wikipedia.org/wiki/Crookes_tube

POWER IS OFF | SHADOW CAST | U Shaped Magnet | "U" Magnet Pole Reversal

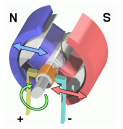
DIY Electron Accelerator Cathode Ray Wine Bottle : Subatomic Particles

Partially evacuated glass bulb vaccule anode (-) electrons generate ionized high DC voltage (1-100kV kilovolts) to cathode (+) coil induction tube (a "Ruhmkorff coil"), poked through bottle backside, blackening inner accelerator. Air hose at the bottle top. Lenard open glass tube is aluminium foil sealed. Isolation transformer and DC vs AC requirements needed.

cdn.instructables.com/ORIG/FC4/4ZKD/GRDQDOTP/FC44ZKDGRDQDOTP.jpg

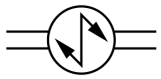
Electromagnetic Motor (Quartz Rock Tumbler, Carrot Powder Mill)

Two looping wire bundles have contact leads line bar opposite sides. Brushes contact at neg (-) North (0° to 180°) and pos (+) South (180° to 360°) while rotating. Magnets fill curved perimeter (pii).



$$I \times V = \tau\omega + I^2 \times R$$

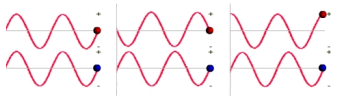
I = Current measured in Amperes
V = Voltage measured in Volts
τ = uppercase Tau (torque)
ω = lowercase Omega (radii)



Circuit Schematic Symbol for Torque

Marbles tumble in ball mill, smoothing material into fine powder. Aeration is constant allowing fast dry time. Chunky crystal quartz pieces added in, will eventually pound rock chunks into smooth gems. **northwestern robotics speed-torque curve : youtube.com/watch?v=8_SQnN6eNz4**

WAVES & PHASE (SONIC, ELECTRIC, MAGNETIC, LIGHT) HEAT vs COLD



In Phase | 180° Phase Cancellation | 90° Phase Cancellation

Waves are quantified as speed, length (λ) and periodicity. Wave directions (vectors) are measured via sine, cosine, and tangent. Heat and cold measure particle motion (vibration) in relation to kinetics (particle impacts). Moving particles produce heat, stillness convects cold.

OHMS Electro Resistive Power Watts Theory	PiezoElectric Sound Intensity Theory
I = Amperes (amps) and Coulomb / Second	v = Particle Velocity and Metre / Second
V= Volts (SI) Standard International Unit (Voltaire)	Pa = Pascals and Sound Pressure
R = Ohms Resistance	Z = Impedance (N * sec / metre^2)
P = Power and Joules / Second	J = Watts / metre^2 (Sound Intensity)

ELECTRIC MATH AND SOUND MATH AS WAVE THEORY MATH

$V / R = P / V = \sqrt{P / R} = I$	$Pa / Z = J / Pa = \sqrt{J / Z} = v$
Charge in Coulomb (SI Unit), "electric current"	Particle Velocity in Metres per Second
$I * R = P / I = \sqrt{P * R} = V$	$v * Z = J / v = \sqrt{J * Z} = Pa$
Potential Difference between two points	Sound Pressure in Pascals
$I * V = R * I^2 = V^2 / R = P$	$v * Pa = Z * v^2 = Pa^2 / Z = V$
The Watts is an International System (SI Unit)	Irradiance as radiant flux. Watts/meter^2 (SI Unit)
$V^2 / P = P / I^2 = V / I = R$	$Pa^2 / J = J / v^2 = Pa / v = Z$
Electric Resistance between 2 points on a conductor	Density as kg/m^3 && wave speed (Acoustic Impedance)

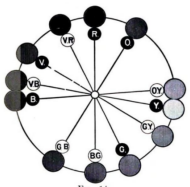


Fig. 14.

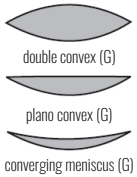
Milton Bradley Elementary Color 1895

Clockwise, R, O, OY, Y, GY, G, BG, GB, B, VB, V, VR

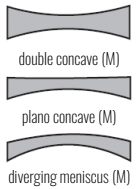
Perpendiculars and Recticulars. Oculars (Orbital Resonance), innoculars (Huxley) and binoculars. Light is magnetic, and this wheel is slat. Blue green cross over points may be pseudo vector pole birkeland currents meet and colors wrap in alternating current (AC) signals. The duo pole nature to light may be evidenced in the zero rest mass measurement known as the ion. **books.google.ca/books?id=TvBIAAAAIAAJ**

Orange noise may be past the perpendicular (purple). Brown noise before.

CONVERGING LENS

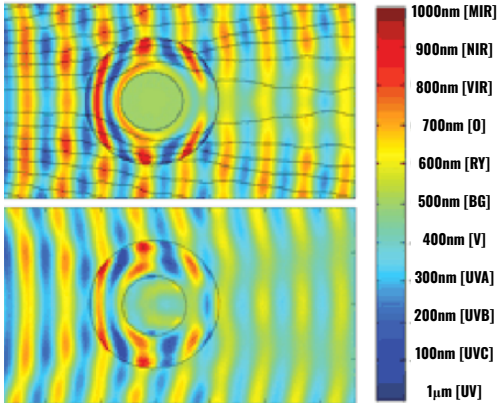


DIVERGING LENS



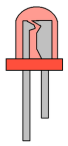
Cylindrical Transformation Cloak Electric Field

researchgate.net : tinyurl.com/yv8mvhun



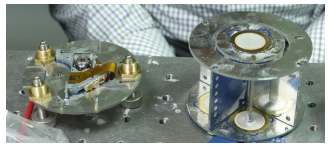
physics.louisville.edu/cldavis/phys299/notes/lo_lenses.html

Light Emitting Diodes (LED)	WAVELENGTH λ, Sigma	BAND GAP	COLOUR TEMP °K
GeSn	Far Infrared [FIR] (15μm - 1mm)	0.81 <> 0.65 eV	193<>3 K
GaAs	> 760nm (MIR)	2.24 eV	362<>193 K
	(SWIR) 1.4–3 μm	413–886 meV	
AlGaAs	610nm (VG) to 760nm NIR)	1.77 eV	
GaP +/-	570nm (VG) <> 760nm (VR)	2.24 eV	
GaP + Nitrogen		2.18 eV - 2.25 eV	
GaP + Zinc Oxide		2.26 eV	
InGaN	400nm (UV) to 570nm (VG)		
ZnSe	450 (VB) to 500 (VB)		
Diamond	235nm (UV)	**5.47 eV**	
Boron Nitride	215nm (UV)		
AlN Aluminium	210nm (DUV) Deep Ultra Violet		



LIGHT ELEMENTS (PHOTOELECTRIC) lednique.com/leds-and-colour/ **DAMPENING ELEMENTS (ELECTROSTATICS)**
Germanium(Ge), Aluminum(Al), Gallium(Ga), Phosphide(P), India(In), Nitride(N), Zinc(Zn) | Arsenic(As), Saetih(Sn), Selenide(Se)

Atomic Force Microscopy (AFM) :: Salvaged CD Player

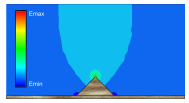
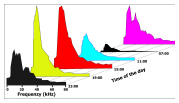


instructables.com/id/A-DIY-AFM-Whokshop/

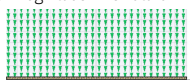
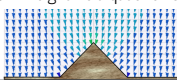
Cut parts from board, glue 4 piezo ceramic plates and solder wires. The 5th piezoelectric plate rides on top and the center mount sits four legs, one on each piezo plate at bottom. Sandwich the dvd/cd laser mount to scanner bed and viola! DVD Tracks (pitch= 740 nm) for calibrating the scanning range of the scanner. DIY AFM system with 12bits controller can resolve 0.5 nm which is similar to 2 carbon atom layers height on HOPG (Highly Ordered Pyrolytic Graphite) surface. **software @ gwyddion.net**

Bosnyian Pyramid Ultrasound 28kHz

sbresearchgroup.eu : tinyurl.com/mtmsvnl

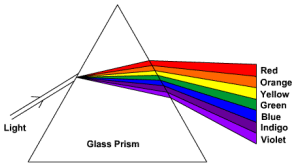



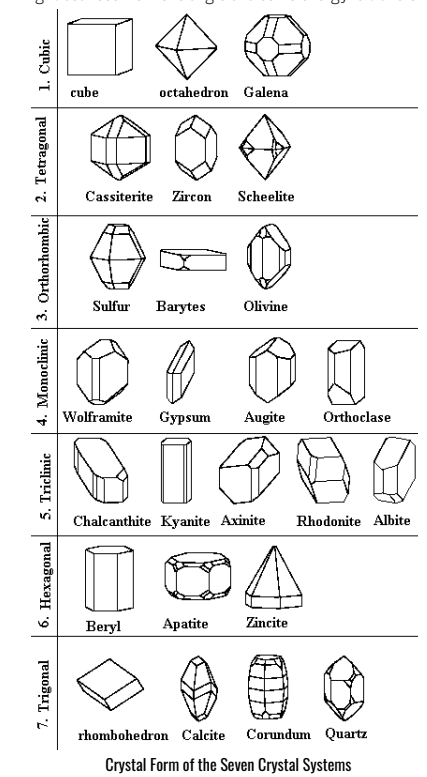
Natural Very Low Frequencies (VLF) atmospherics @ 28kHz are shorter than 500 microseconds (μs) on average. The Bosnian Sun Pyramid top, the EM Signal is almost continuous and has a much bigger magnitude. The natural 28kHz signal is a quasi-sine (deformed) waveform. The hill pyramid itself is ½ mile wide and covered in conglomerated calcium carbonate rocks.

Diffusion, Diffraction, Reflection, Refraction Photoelectrics :

Fusions combine. Diffusion splits, diverges and reconnects warming and softening *(sectio aurea)*. Fractions divide light. Diffraction is bounce scatter cooling an area. Refracting is coalescing doppler waves. Reflection is shown right measured in angstroms. When two light paths converge and combine, down a new path together, the sum is reflection.in angstroms. When light bounces from one angle and some energy is transformed or lost, it is a reflection.



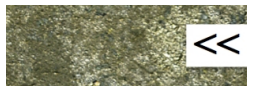


Crystal Form of the Seven Crystal Systems
uq.edu.au/_School_Science_Lessons/UNPh34.html

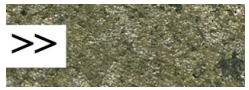
METAMORPHIC CRYSTAL

Polymineralic Massive Sulfide, Quartz Diorite, Copper Cliff South Mine Sudbury Ontario

en.wikipedia.org/wiki/Pentlandite

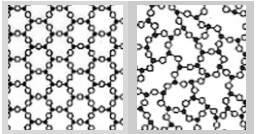


Pentlandite patchy bright brass-colored ($(Ni,Fe)_9S_8$ Nickel Iron Sulfide)



Pyrrhotite iron monosulfide (Fe(1-x)S) metallic luster, a brownish-brassy or bronzish color, a black streak, no cleavage, and is variable (aerated) magnetic.

Magnetite Greyish to Black (Fe_3O_4 Iron Oxide)



Gary Beene 3D Math Equation Summary garybeene.com/3d/3d-math.htm

Three dimensional math used to translate objects to perspective and navigate through space. Dots in XYZ canvas space are transformed, processed through matrix math, and rendered.

Transform Functions

Translate
x' = x + dx
y' = y + dy
z' = z + dz

Scale
x' = x * Ax
y' = y * Sy
z' = z * Sz

Perspective
x' = d * y / (d - z)
y' = d * x / (d - z)
z' = 0

Rotate X-axis
x' = x
y' = y cos(a) - z sin(a)
z' = y sin(a) + z cos(a)

Rotate Y-axis
x' = z sin(a) + x cos(a)
y' = y
z' = z cos(a) - x sin(a)

Rotate Z-axis
x' = x cos(a) - y sin(a)
y' = x sin(a) + y cos(a)
z' = z

Vector Addition
P3 = P1 + P2 = <x1, y1, z1> + <x2, y2, z2> = <x1 + x2, y1 + y2, z1 + z2>

Cross Product (Imaging Mapping)
A x B = <x1, y1, z1> X <x2, y2, z2> = <y1z2 - z1y2, z1x2 - x1z2, x1y2 - y1x2> | i j k |
A x B = | x1 y1 z1 | = | y1 z1 |i - | x1 z1 |j + | x1 y1 |k | x2 y2 z2 | | y2 z2 | | x2 z2 | | x2 y2 |
|AxB| = |A| x |B| x sin(a)

Dot Product (Rendering/Shading/Coloring) Phong
A·B = <x1, y1, z1> · <x2, y2, z2> = x1x2 + y1y2 + z1z2
A·B = |A| |B| cos(a)

A·B = <x1, y1, z1> |x2|
|y2|
|z2|

Matrix Addition A + B = | x1 y1 | + | c1 c2 | = | x1+c1 y1+c2 | | x2 y2 | | d1 d2 | | x2+d1 y2+d2 |

Matrix Multiplication

| a b c | | r s | | ar + bt + cv as + bu + cw |
| d e f | X | t u | = | dr + et + fv ds + eu + fw |
| v w |

2x2 Determinant
D = | a b | = ad - bc
| c d |

3x3 Determinant
| c1 c2 c3 |
D = | x1 y1 z1 | = c1 | y1 z1 | - c2 | x1 z1 | + c3 | x1 y1 |
| x2 y2 z2 | | y2 z2 | | x2 z2 | | x2 y2 |

Translation	Scaling	Perspective	X-Axis	Y-Axis	Z-Axis
| 1 0 0 0 |	| sz 0 0 0 |	| 1 0 0 0 |	| 1 0 0 0 |	| cos(a) 0 -sin(a) 0 |	| cos(a) sin(a) 0 0 |
| 0 1 0 0 |	| 0 sy 0 0 |	| 0 1 0 0 |	| 0 cos(a) sin(a) 0 |	| 0 1 0 0 |	| -sin(a) cos(a) 0 0 |
| 0 0 1 0 |	| 0 0 sx 0 |	| 0 0 0 -1/d |	| 0 -sin(a) cos(a) 0 |	| sin(a) 0 cos(a) 0 |	| 0 0 1 0 |
| dx dy dz 1 |	| 0 0 0 1 |	| 0 0 0 1 |	| 0 0 0 1 |	| 0 0 0 1 |	| 0 0 0 1 |

Javascript Code Equivalents 1. Initialize/Define 2. Pipe Trough Functions http://www.garybeene.com/3d/3d-purejs.htm

1. Initialization is variable declaration, example, VarableX = 1. Each point in space needs an X, Y, Z position. For a cube, that is 8 points. 12 lines will be drawn from those 8 points.

```
Theta = 0.015: L = 50: POV = 500: Offset = 100:
iLoop = 0: Delay = 15:  NumberTriangles=12:
XOffset=100: YOffset=100:
Px = new Array(-L, -L,  L,  L, -L, -L, L, L); // real x-coord, 8 pts
Py = new Array(-L,  L,  L, -L, -L,  L, L, -L); // real y-coord, 8 pts
Pz = new Array(-L, -L, -L, -L,  L,  L, L, L); // real z-coord, 8 pts
PPx = new Array(-L, -L,  L,  L, -L, -L, L, L); // projected x-coord, 8 pts
PPy = new Array(-L,  L,  L, -L, -L,  L, L, -L); // projected y-coord, 8 pts
XP = new Array(4):
  YP = new Array(4):
  V1 = new Array(0, 0, 4, 4, 7, 7, 3, 3, 2, 2, 3, 3): // vertex1
  V2 = new Array(3, 2, 0, 1, 4, 5, 7, 6, 6, 5, 0, 4): // vertex2
  V3 = new Array(2, 1, 1, 5, 5, 6, 6, 2, 5, 1, 4, 7): // vertex3
  V4 = new Array(12): // Average Z of all 3 vertices
  V5 = new Array(12): // DotProduct of Normal and POV

function RotatePoints() {
  for (wr=0: wr < 8: wr++) {
    oldY = Py[wr]: oldZ = Pz[wr]:
    Py[wr] = oldY * Math.cos(Theta) - oldZ * Math.sin(Theta);  //rotate about X
    Pz[wr] = oldY * Math.sin(Theta) + oldZ * Math.cos(Theta);  //rotate about X

    oldX = Px[wr]: oldZ = Pz[wr]:
    Px[wr] = oldZ * Math.sin(Theta) + oldX * Math.cos(Theta);  //rotate about Y
    Pz[wr] = oldZ * Math.cos(Theta) - oldX * Math.sin(Theta);  //rotate about Y

    oldX = Px[wr]: oldY = Py[wr]:
    Px[wr] = oldX * Math.cos(Theta) - oldY * Math.sin(Theta);  //rotate about Z
    Py[wr] = oldX * Math.sin(Theta) + oldY * Math.cos(Theta);  //rotate about Z
  }
}
```

Loop, For, Do While, and Foreach vs GoTo and Switch

Nuclear Magnetic Resonance Imaging is a radio coil and an electromagnet connected to a differential output circuit interpreted to a visual display. MRI's in hospitals use only magnetic information to abstract medical imagery. Nuclear MRI is ordered to magnitudes smaller, looking at DNA, RNA and Carbon 14 archeological materials.

Anisotropic linear measurements are not smooth or equal. Bulges.

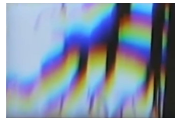
$D_{zz} = D_{||} \geq D_{xx} = D_{yy} = D_{\perp}$ (prolate)

$D_{zz} = D_{yy} = D_{\perp} \geq D_{xx} = D_{||}$ (oblate)

Isotropic linear measurements are smooth and/or equal.

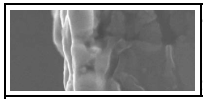
$D_{xx} = D_{yy} = D_{zz}$ || $D_{xx} \leq D_{yy} \leq D_{zz}$

OCTINOXATE - AVOBENZONE



Goethe Colours, Green (Pressure) and Magenta (Velocity)
Green electromagnetic sources show trough in terrestrial shadows. Magnetic magentas and deep blues fill in empty pressureless velocity. **artbyarr.wixsite.com : tinyurl.com/h2evbcfb**

Traditional Tinned Glass Fixed Resolution Sil. Halides
Glass cools over molten tin kinking vertical lines visible at >8% angle. 30% consumer glass is too poor grade. 300 lp/mm color film vs 10,000 lp/mm holographic gelatinous slime. 3D silver prints approach traditional rotten jello quality. **youtube.com/watch?v=5IszBMYJ5Ks**



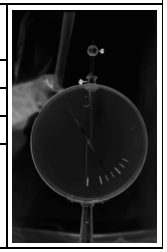
<< Iron DiSelenide Annealed @ 500° C 6Hrs @ 2μm 7kV
Dielectric mirrors use zinc selenide. ZnSe LEDs emit blue light and are amber $C_{10}H_{16}O$ in color . Iron selenide super conducts ferromagnetism (ferro,serro,zero) at < 40K. Selenium, selenate and selenite are dietary. Selenides are non-dietary oxides -2 (Se^{2-})

metalloid inorganic hydrogen selenide (H_2Se) hydride. Anion in mineral ore Cu, Pb, Fe, Zn, Hg penroseite (Ni,Co,Cu)Se2. Organic dietary photovoltaic selenium source *lecythis zabucajo*. Coal rivers suffer environmental selenium waste. 1st Solar cell in the 18th century used selenium and 22%+ efficiency in modern green energy industries. Silver(Ag) Tin(Sn) Sodium(Na) industrial uses. 25th least abundant mineral. **Periodic table Chalcogens** (oxygen elements): oxygen (O), sulfur (S), selenium (Se), tellurium (Te), and radioactive polonium (Po). Selenium is a better nucleophile and reacts to oxygen species faster than sulfur. Greek word *chatkos*, meaning "ore." Photoelectric vs photovoltaic. Photoelectric effect could come to mean photoelectric static from comb and tap water. In humans, according to proteomics, Sec is incorporated into at least 25 different proteins. Gamma radiography using Selenium-75. Gamma Rays are a Consequence of Cosmic Ray interaction with the atmosphere. It is the only trace element found in proteins that is genetically encoded.
researchgate.net/publication/310740896_Biological_Chemistry_of_Hydrogen_Selenide

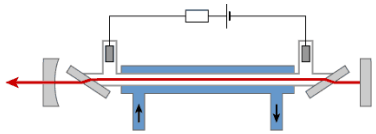
Industrial selenide merged in Tin(Sn), Fused Silica Quartz Remelt

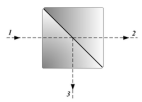
Fuschia is similar in colour to natural amethyst quartz ore (SiO_2).

Photoelectric vs Photovoltaic



Simple Carbon Dioxide Laser and Interferometer rp-photonics.com/co2_lasers.htm





BEAM SPLITTER

Soot candles (footcandles) emit carbon dioxide as does warming water. Light excites in CO_2 as the mirror reflects. "Inter-Zero-Meter" measures the Zero Point magnetic moment at incidence to reflection. **(1)** Incident light **(2)** 50% Transmitted light **(3)** 50% Reflected light. In practice, the reflective layer absorbs some light. **en.wikipedia.org/wiki/Beam_splitter**

Radio, Radiators, Irradiance and Nirvana's Stones

Radial patterns create dicot plants where predictable bipedal stems branch at intervals. Where two radio signals collide, purring and purples may appear. Irradiance along the vertical axis perpendicular to a cross produces irradiance. Probably infrared radiance, even though science says "radiant flux". Solar energy, both day and night combined with lux may measure this elusive physics force. The small letter "n" written in large case sign at word start is an indicator to a mining entrance. In modern days, the symbol became "N" possibly representing an exhausted mine. Nirvana's are old mining veins with irradiant material.
A conversion guide: solar irradiance and lux illuminance **jvejournals.com/article/21667**

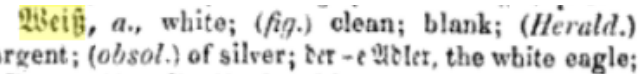
Luxembourgish, Movies, Moies, and the Letter "V"

Did the Bourgeois electrify the world magnetically with lux? Latin tends to arbitrary place V's in words re-rewritten. The "Movie" was "Moies" and that makes sense. More eyes! Moies is not in the latin language, it is instead in the Luxembourg Germany language. Le, La, Li, Lu and Lo prefixes from pre latin culture, are compounded in modern times. Example, Langfang China, is instead, LA ⊓ GSANG. **google.translate.com**

Silver Halides : Lead vs Nickel Nickel silver, Maillechort, German silver, Argentan, new silver, nickel brass, albata, alpaca, is copper/nickel/zinc alloy. **en.wikipedia.org/wiki/Nickel_silver**

SILVER SINKS TO THE BOTTOM, ATOMICS SMALLER, COLDER AND HEAVIER

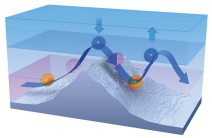
Argentum (ar-jen '-tum) [L .: gen ., Argenti]. Silver. Ag = 108 ; quantivalence, 1. A malleable and ductile metal of brilliant white luster. It tarnishes only in the presence of free sulphur, sulphur gases, and phosphorus. It is an excellent substance for vessels used in pharmacy and for sutures used in surgery. The following salts are used : A. cyanidum , AgCN , used in the preparation of hydrocyanic acid . A. iodidum , Agi, sometimes used internally instead of A. nitras. Dose gr. 4 -j. A. nitras, AgNO3, " nitrate of silver," argentic nitrate , " lunar caustic," a powerful astringent and an escharotic of moderate strength . It stains skin and other tissues black when applied in strength . In small doses it stimulates the heart and nerve centers . If too long continued , it leaves a slate- colored , insoluble deposit of silver under the skin (Argyria). Dose gr. % -12. A. nitras fusus, " stick caustic.' Contains four per cent. of silver chlorid . It is used locally . The mitigated or dilute stick is fused with an equal weight of potassium nitrate . A.oxidum , Ag, O , explosive when treated with ammonia . Dose gr . 2 - ij . A. vivum , an old name for mercury or quicksilver . **Actinic (ak-tin '- ik)** [artis, a ray] . Referring to those wave-lengths of the spectrum corresponding to the violet and ultra -violet parts of the same that produce chemical changes in the haloid salts of silver, and are therefore valuable in photography. **Adamantin (ad -am -an' - tin)** [asápas, from å priv.; dauáşeiv , to overpower). Pertaining to adamant. A. Cement, a substance used for filling teeth, consisting of finely powdered silex or pumice stone mixed with an amalgam of mercury and silver. See Amalgam . A. Substance, the enamel of the teeth . **Argentation (ar-jen -ta '-shun) [argentum , silver).** Staining with a preparation of silver. **Argentic (ar-jeni-tik) [argentum , silver).** Pertaining to , or of the nature of silver. Containing silver as a univalent radical. **Argentine (arl-jen -tin) [argentum , silver).** Containing or resembling silver. **Argyria (ar-jirl-e-ah) [argentum , silver).** A form of chloasma or discoloration of the skin and mucous membranes produced by the prolonged administration of nitrate of silver, the molecules of silver being deposited in much the same position as those of the natural pigment of the skin . It may be general, from internal administration , or local, from its local application .



Weiß, *a.*, white; (*fig.*) clean; blank; (*Herald.*) argent; (*obsol.*) of silver; der weiße Adler, the white eagle;

C. Schünemann, 1868 **books.google.ca/books?id=JSI9AQAAIAAJ**

In the 5th Century the letter F was invented to replace the S. Somewhere in German to English History, the typeface kludged the letters "fz" into "ß". Probably during solar magnetic extinction events. And possibly to improve thier weifz health with silver.



Gravity Waves and Gravity Weather Stations
The United States to America has weather stations called, "gravity weather". Inside some countries, it is the only scientific proof to such an event.
aopa.org : tinyurl.com/y2avcnvo

Open Source Software : Holography : github.com/AaronJackson/vrn-docker
Anyone can edit (OSS) vrn docker, free to download. Transforms 2D faces into 3D images using shadow depth to planar mapping.

```
sudo docker pull asjackson/vrn:latest  ?
```

DIY RADIOMETER : SOOTED MICA FAN

The earliest holograms may have been fools' fire, or ancient stories to mirages. In 1962, Yuri Denisyuk, Emmett Leith, and Juris Upatnieks used lasers to create complex light images. Etymology is werd science and from this we derive important ancient understandings in a time before our optical biogenetics were mutated in solar extreme weather events. **[SUPPOSITION]** DOVE (DOUBLE)